

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:

GRISPO

Serial No.: 10/780,269

Filed: FEBRUARY 17, 2004

For: **"INJECTOR AUTO PURGE"**

Confirmation No. 2232

Art Unit: 3767

Examiner: GILBERT, ANDREW

Atty Docket No. 50319-00139

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPEAL BRIEF UNDER 37 CFR § 41.37**

**I. REAL PARTY IN INTEREST**

MALLINCKRODT INC.  
675 McDonnell Boulevard  
Hazelwood, Missouri 63042

**II. RELATED APPEALS AND INTERFERENCES**

No other appeals or interferences are currently known to Appellant that will directly affect, be directly affected by, or have a bearing on the decision to be rendered by the Board of Patent Appeals and Interferences in the present appeal.

**III. STATUS OF CLAIMS**

Claims 57, 58, and 68-80 are pending in the application. Claims 1-56 and 59-67 have been canceled. The rejection of claims 57, 58, and 68-80 is the subject of this appeal.

#### **IV. STATUS OF AMENDMENTS**

No claim amendments were filed after the mailing of the Final Office Action on May 24, 2010 ("Final Office Action"). All claim amendments have been entered, and pending claims 57, 58, and 68-80 are provided in the attached Claims Appendix.

#### **V. SUMMARY OF CLAIMED SUBJECT MATTER**

##### Independent Claim 57:

Independent claim 57 is directed to a method of using a dual head injector. See Appellant's specification at page 20, line 8 to page 22, line 25, and Figures 8 and 10. The method includes "mounting a first syringe to the injector." See Appellant's specification at page 20, lines 8-16 and Figure 8. The method further includes "mounting a second syringe to the injector." See Appellant's specification at page 20, lines 8-16 and Figure 8.

The method also includes "coupling a first section of Y-tubing to the first syringe." See Appellant's specification at page 20, lines 13-21 and Figure 8. The method includes "coupling a second section of the Y-tubing to the second syringe." See Appellant's specification at page 20, lines 13-21 and Figure 8. Independent claim 57 also includes that "the Y-tubing further comprises a third section, wherein the first, second, and third sections meet at an intersection." See Appellant's specification at page 20, lines 17-21 and Figure 8. Additionally, "each of the first and second sections feed into the third section." See Appellant's specification at page 20, lines 17-21 and Figure 8.

Independent claim 57 also includes "initiating a purging operation while the first and second syringes are mounted to the injector and while the first and second sections of the Y-tubing are coupled to the first and second syringes, respectively." See Appellant's specification at page 8, line 21 through page 9, line 2, page 20, line 22 through page 21, line 5, page 21, lines 12-25, and Figures 8 and 10. Additionally,

"the first syringe comprises contrast media prior to the initiation of the purging operation." See Appellant's specification at page 20, lines 23-25. Further still, "the second syringe comprises saline prior to the initiation of the purging operation." See Appellant's specification at page 20, lines 23-25.

The purging operation of independent claim 57 includes "advancing a first plunger drive ram of the injector to move a plunger of the first syringe to a first predetermined stop point where the plunger of the first syringe stops." See Appellant's specification at page 22, lines 1-8, and Figures 8 and 10. In this regard, "the advancing of the first plunger drive ram purges air from the first syringe and the first section of Y-tubing and fills the first section of the Y-tubing with contrast media from the first syringe" and "the advancing of the first plunger drive ram purges air up to the intersection of the first, second, and third sections of the Y-tubing." See Appellant's specification at page 22, lines 1-8; see also page 20, line 22 through page 21, line 10.

The purging operation further includes "advancing a second plunger drive ram of the injector to move a plunger of the second syringe to a second predetermined stop point where the plunger of the second syringe stops." See Appellant's specification at page 22, lines 9-17. In this regard, "the advancing of the second plunger drive ram purges air from the second syringe, the second section of the Y-tubing, the intersection of the first, second, and third sections of the Y-tubing, and the third section of Y-tubing." See Appellant's specification at page 22, lines 9-17. Accordingly, "the advancing of the first plunger drive ram occurs before the advancing of the second plunger drive ram." See Appellant's specification at page 22, lines 1-17 and Figure 10 (steps 146/150 are executed before steps 154/156; after steps 146/150 are addressed on page 22, lines 1-8, page 22, line 9 starts with the word "next," followed by a discussion of steps 154/156). Furthermore, "the advancing of the second plunger drive ram comprises filling each of the

second and third sections of Y-tubing with saline from the second syringe." See Appellant's specification at page 22, lines 9-17; see also page 20, line 22 through page 21, line 10.

Also, independent claim 57 includes "initiating an injection procedure that includes injecting contrast media into the patient from the first syringe." See Appellant's specification at page 22, lines 18-20 and Figure 10. The injection procedure according to independent claim 57 occurs "after the purging operation is completed," "while the first and second syringes are mounted to the injector," and "while the first and second sections of the Y-tubing are coupled to the first and second syringes, respectively." See Appellant's specification at page 7, line 20 through page 8, line 3; page 8, line 21 through page 9, line 2; and page 22, lines 18-25 and Figure 10.

#### Independent Claim 71

Independent claim 71 is directed to a method of using a dual head injector. See Appellant's specification at page 20, line 8 to page 22, line 25, and Figures 8 and 10. The method includes "mounting a first syringe to the injector." See Appellant's specification at page 20, lines 8-16 and Figure 8. The method further includes "mounting a second syringe to the injector." See Appellant's specification at page 20, lines 8-16 and Figure 8.

Additionally, the method of independent claim 71 includes "coupling a first section of Y-tubing to the first syringe." See Appellant's specification at page 20, lines 13-21 and Figure 8. Furthermore, the method includes "coupling a second section of the Y-tubing to the second syringe." See Appellant's specification at page 20, lines 13-21 and Figure 8. The method also includes that "the Y-tubing further comprises a third section." See Appellant's specification at page 20, lines 19-21 and Figure 8. In this regard, "the first, second, and third sections meet at an intersection." See Appellant's specification at page 20, lines 17-21 and Figure 8. Accordingly, "each of the first and second sections feed into the third section

such that the third section is downstream of each of the first and second sections." See Appellant's specification at page 20, lines 17-21 and Figure 8.

The method of independent claim 71 further includes "initiating a purging operation while the first and second syringes are mounted to the injector and while the first and second sections of the Y-tubing are coupled to the first and second syringes, respectively." See Appellant's specification at page 8, line 21 through page 9, line 2, page 20, line 22 through page 21, line 5, page 21, lines 12-25, and Figures 8 and 10. The method further includes "the first syringe comprises contrast media prior to the initiation of the purging operation." See Appellant's specification at page 20, lines 23-25. Additionally, "the second syringe comprises saline prior to the initiation of the purging operation." See Appellant's specification at page 20, lines 23-25.

The purging operation of the method of independent claim 71 includes "advancing a first plunger drive ram of the injector to move a plunger of the first syringe to a first predetermined stop point where the plunger of the first syringe stops" and "the advancing a first plunger drive ram step comprises purging air up to a first location of the Y-tubing and directing contrast media from the first syringe into the Y-tubing." See Appellant's specification at page 22, lines 1-8 and Figure 10; see also page 20, line 22 through page 21, line 10.

The purging operation further includes "advancing a second plunger drive ram of the injector to move a plunger of the second syringe to a second predetermined stop point where the plunger of the second syringe stops" and "the advancing a second plunger drive ram step comprises purging air up to a second location of the Y-tubing and directing saline from the second syringe into the Y-tubing." See Appellant's specification at page 22, lines 9-17. The purging operation of the method of independent claim 71 further includes that "the second location is downstream of the first location." See Appellant's

specification at page 22, lines 14-17. The purging operation also includes that "the advancing of the first plunger drive ram occurs before the advancing of the second plunger drive ram." See Appellant's specification at page 22, lines 1-17 and Figure 10 (steps 146/150 are executed before steps 154/156; after steps 146/150 are addressed on page 22, lines 1-8, page 22, line 9 starts with the word "next," followed by a discussion of steps 154/156).

Also, independent claim 71 includes "initiating an injection procedure that includes injecting contrast media into the patient." See Appellant's specification at page 22, lines 18-20 and Figure 10. The injection procedure according to independent claim 71 occurs "after the purging operation is completed," "while the first and second syringes are mounted to the injector," and "while the first and second sections of the Y-tubing are coupled to the first and second syringes, respectively." See Appellant's specification at page 7, line 20 through page 8, line 3; page 8, line 21 through page 9, line 2; and page 22, lines 18-25 and Figure 10.

#### **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

1) Whether claims 57, 58, and 68-80 are unpatentable under 35 U.S.C. 103(a) over U.S. Patent No. 6,471,674 to Emig et al. ("Emig") in view of Medrad, Inc., "Stellant CT Injection System", Operation Manual Catalog #SOM 700 EN, 2003, 88 pages ("Stellant OMC").

#### **VII. ARGUMENTS**

**The rejection of Claims 57, 58, and 68-80 under 35 U.S.C. § 103(a) based on Emig in view of Stellant OMC is improper.**

In the Final Office Action, claims 57, 58, and 68-80 were rejected under 35 U.S.C. §103(a) as being unpatentable over Emig in view of Stellant OMC. This rejection is traversed because Emig and

Stellant OMC do not, alone or in any combination, teach or disclose each and every element of or render obvious any of claims 57, 58, and 68-80.

#### Independent Claim 57

Independent claim 57 is directed to a method of using a dual head injector. The method includes mounting a first syringe to the injector and mounting a second syringe to the injector. The method also includes coupling a first section of Y-tubing to the first syringe and coupling a second section of the Y-tubing to the second syringe. The Y-tubing further comprises a third section, wherein the first, second, and third sections meet at an intersection and each of the first and second sections feed into the third section. The method also includes initiating a purging operation while the first and second syringes are mounted to the injector and while the first and second sections of the Y-tubing are coupled to the first and second syringes, respectively. The first syringe comprises contrast media prior to the initiation of the purging operation, and the second syringe comprises saline prior to the initiation of the purging operation.

The purging operation of independent claim 57 includes advancing a first plunger drive ram of the injector to move a plunger of the first syringe to a first predetermined stop point where the plunger of the first syringe stops. The advancing of the first plunger drive ram purges air from the first syringe and the first section of Y-tubing and fills the first section of the Y-tubing with contrast media from the first syringe. The advancing of the first plunger drive ram also purges air up to the intersection of the first, second, and third sections of the Y-tubing. The purging operation further includes advancing a second plunger drive ram of the injector to move a plunger of the second syringe to a second predetermined stop point where the plunger of the second syringe stops. The advancing of the second plunger drive ram purges air from the second syringe, the second section of the Y-tubing, the intersection of the first, second, and third sections

of the Y-tubing, and the third section of Y-tubing. The advancing of the second plunger drive ram comprises filling each of the second and third sections of Y-tubing with saline from the second syringe. The advancing of the first plunger drive ram occurs before the advancing of the second plunger drive ram.

The method of independent claim 57 also includes initiating an injection procedure that includes injecting contrast media into the patient from the first syringe. The injection procedure occurs after the purging operation is completed, while the first and second syringes are mounted to the injector, and while the first and second sections of the Y-tubing are coupled to the first and second syringes, respectively.

Part of the combination of features of claim 57 requires executing a purging operation and thereafter an injection procedure, where Y-tubing is coupled to each of first and second syringes for the execution of each of the purging operation and the injection procedure, where the injection procedure is executed after the execution of the purging operation, and where the purging operation includes: 1) advancing a first plunger drive ram of the injector to move a plunger of the first syringe to a first predetermined stop point where the plunger of the first syringe stops, which purges air from the first syringe and a first section of Y-tubing, which furthermore fills the first section of the Y-tubing with contrast media from the first syringe, and where this advancement purges air up to where the first section of Y-tubing intersects with second and third sections of the Y-tubing; and 2) advancing a second plunger drive ram of the injector to move a plunger of the second syringe to a second predetermined stop point where the plunger of the second syringe stops, which purges air from the second syringe, the second section of the Y-tubing, the intersection of the first, second, and third section of the Y-tubing, and the third section of the Y-tubing, which furthermore fills the second and third sections of the Y-tubing with saline from the second syringe, and where the advancement of the second plunger drive ram for the purging operation occurs after the advancement of the first plunger drive ram for the purging operation.



Neither Emig nor Stellant OMC, individually or collectively, teach or disclose each and every element of claim 57. For instance, neither Emig nor Stellant OMC disclose the required sequence for the advancement of the first and second plunger drive rams required by the purging operation set forth in claim 57. Column 6, lines 6-12 of Emig addresses a priming operation involving saline from syringe 500. Thereafter, column 6, lines 12-14 of Emig addresses a priming operation involving contrast from syringe 300. No ordering of the saline prime and the contrast prime is explicitly set forth in Emig, and the Examiner is in agreement on this point (e.g., page 4 of the Final Office Action – "it is not clear if Emig . . . explicitly disclos[es] wherein the advancing of the first plunger drive ram occurs before the advancing of the second plunger drive ram").

Emig could be interpreted in a manner that establishes an ordering of the saline prime and the contrast prime. There is a check valve 410 associated with the contrast syringe 300, and a check valve 450 associated with the saline syringe 500 in Emig (e.g., Figure 2C). Presumably these check valves 410, 450 pertain to the multi-patient configuration addressed by Emig at column 5, lines 45-57. In any case, a saline prime is addressed by Emig at column 6, lines 6-11, followed by a notation that "check valve 410 prevents saline from entering contrast syringe 300" (column 6, lines 11-12), and then followed by the reference to a contrast prime (column 6, lines 12-15). No mention is made of the check valve 450 (associated with the saline syringe 500) in conjunction with such a contrast prime. Based upon this presentation, Emig could be interpreted to define a purging operation that uses a saline prime, followed by a contrast prime. This is the exact opposite of the purging sequence set forth in claim 57, where the first plunger drive ram (associated with contrast media) is advanced to purge a defined region, followed by the second plunger drive ram (associated with saline) being advanced to purge a different defined region.

The Stellant OMC does not remedy the above-noted sequencing deficiency of Emig in relation to claim 57. In a prior rejection of claim 57 based solely on the Stellant OMC, the Examiner referred primarily to two different sections of the Stellant OMC. The section on page 3-30 of the Stellant OMC does indeed mention "Ensure all air is purged," but does not provide any details as to how this is done. No specifics are provided on what plunger drive ram movement or combination of plunger drive ram movements are utilized to provide any purging operation in this section of the Stellant OMC.

The Examiner also previously referenced pages 3-34 through 3-36 of the Stellant OMC in relation to a previous rejection of claim 57. This section lists steps 1-14 in relation to an Auto Load function to load a syringe. Step 9 from this listing of steps (page 3-36) does indicate that a "Prime" button may be pressed, and that the injector may automatically move forward to fill the patient tubing with fluid. This of course is not a disclosure of the "advancing a first plunger drive ram" step and the "advancing a second plunger drive ram" step required by the purge operation of claim 57 – two different movements of two different plunger drive rams in a certain time sequence. In fact, the very next sentence of step 9 indicates that "on a dual syringe system, the unit can be configured to either prime the tubing with contrast (side A) or saline (side B)" (emphasis added). This sentence clearly conveys that the priming operation of step 9 entails moving the plunger of a single syringe – either the syringe on the side A of the injector or the syringe on the side B of the injector. Claim 57 specifies that each of the first and second plunger drives rams is moved in the execution of the purging operation. Moreover, the timing of these movements is addressed by claim 57, along with how both saline and contrast media are introduced into the Y-tubing, as well as the extent of the air purge that is provided by each of these movements. Nothing of this type is addressed by the Stellant OMC.

Based upon the foregoing, neither Emig nor Stellant OMC addresses the sequencing of the purging operation that is very explicitly set forth in claim 57. In the Final Office Action, the Examiner in fact takes the position that it is not clear whether Emig or Stellant OMC's explicitly disclose the advancing of the first plunger drive ram (associated with contrast media in claim 57) before the advancing of the second plunger drive ram (associated with saline in claim 57). Notwithstanding the lack of disclosure by each of Emig and Stellant OMC as to the purging operation sequence explicitly set forth in claim 57, the Examiner nonetheless takes the position that claim 57 would be obvious to one of ordinary skill in the art.

The Examiner offers three possible rationales to support the obviousness rejection of claim 57. Each rationale appears to rely upon a fundamental presumption that there are only two options for undertaking a purging operation: 1) a saline push followed by a contrast push; or 2) a contrast push followed by a saline push. The Examiner has cited no authority for such a position, and any such position would also be in error. A purging operation could be configured in any appropriate manner, for instance one or more saline pushes, one or more contrast pushes, and in any combination (e.g., a saline push, followed by a contrast push, followed by another saline push). Appellant has set forth not only a very specific purging operation sequence, but the regions that are in fact purged in the two parts of this sequence. The purging operation of claim 57 requires that a first plunger drive ram (associated with contrast media) be advanced to a position where the plunger of the first syringe stops, and the advancement of the plunger of the first syringe to this stopping point purges air from the first syringe and the first section of Y-tubing. This part of the purging operation is followed-in-time by an advancement of a second plunger drive ram (associated with saline) to a position where the plunger of the second syringe stops, and the advancement of the plunger of the second syringe to this stopping point purges air from the second syringe, the second section of Y-tubing, the intersection of the first, second, and third sections of Y-

tubing, and the third section of Y-tubing. Based upon the vast option set for configuring a purging operation (which plunger drive ram to move at what time, and for how long), one skilled in the art simply would not be motivated to modify the teachings of Emig and/or Stellant OMC in any manner that would Appellant's invention of claim 57.

The Examiner sets forth a first obviousness rationale contending that it would have been obvious to modify the purge protocol as taught by Emig with the advancing of the first plunger drive ram (associated with contrast media in claim 57) occurring before the advancing of the second plunger drive ram (associated with saline) because "changes in sequence are prima facie obvious in the absence of new or unexpected results." The Examiner cites MPEP § 2144.04(IV)(C) to support this particular obviousness rationale. MPEP § 2144.04(IV)(C) is prefaced by MPEP § 2144.04, wherein it is stated:

"Examples directed to various common practices which the court has held normally require only ordinary skill in the art and hence are considered routine expedients are discussed below. If the applicant has demonstrated the criticality of a specific limitation, it would not be appropriate to rely solely on case law as the rationale to support an obviousness rejection." (Emphasis added)

In this regard, the order of the advancement of the first and second syringe plunger drivers for a purging operation in accordance with claim 57 has been the focus of prosecution. Moreover, such a specific order reduces the waste of relatively expensive contrast, purges air prior to injection, and does so in what is in effect a simple two-step process (i.e., two syringe plunger drive ram movements). As such, reliance by the Examiner on the rationale of MPEP § 2144.04(IV)(C) is inappropriate in this instance.

It should also be noted that the "Legal Precedent as Source of Supporting Rationale" cited by the Examiner in MPEP § 2144.04(IV)(C) is directed to "Changes in Sequence of Adding Ingredients." Claim 57 is not directed to adding ingredients, but instead is focused on how to purge air in preparation for an injection. MPEP § 2144.04(IV)(C) on its face is inapplicable to claim 57. Moreover, claim 57 could be properly viewed as not even being directed to a change in sequence from Emig, as Emig does not explicitly disclose any sequence at all for the saline prime and contrast prime addressed therein. Moreover and as noted above, there are far more than two options for configuring a purging operation. The disclosures of Emig and Stellant OMC simply would not motivate one skilled in the art to configure a purging operation in the manner set forth in claim 57, which not only explicitly specifies a particular purging sequence, but particular regions purged by each part of the sequence.

Another rationale that the Examiner appears to assert in support of the obviousness rejection of claim 57 is that the purging operation set forth in claim 57 is merely the result of combining prior art elements according to known methods. Appellant has not asserted that the physical arrangement set forth in claim 57 is by any means new and novel. However, claim 57 is also not an apparatus claim – claim 57 instead is a method claim. The method steps set forth in the purging operation portion of claim 57 is not known – the Examiner has not asserted that this purging operation is disclosed by any single prior art reference. Therefore, claim 57 simply cannot be viewed as being the result of combining prior art elements according to known methods.

Finally, the Examiner asserts that claim 57 is obvious on an "obvious to try" basis in relation to the purging operation set forth in claim 57. As per MPEP §2143(E), when rejecting a claim based on an "obvious to try" rationale, the Examiner must articulate:

"(1) a finding that at the time of the invention, there had been a recognized problem or need in the art, which may include a design need or market pressure to solve a problem;

(2) a finding that there had been a finite number of identified, predictable potential solutions to the recognized need or problem;

(3) a finding that one of ordinary skill in the art could have pursued the known potential solutions with a reasonable expectation of success; and

(4) whatever additional findings based on the Graham factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness."

If any of these findings cannot be made, the "obvious to try" rationale may not be used to support a conclusion of obviousness.

In the Final Office Action, the Examiner fails to present findings as required to support an "obvious to try" rationale. For instance, the Examiner provides no finding of a recognized problem or need in the art. Furthermore, while the Examiner makes a conclusive statement that a finite number of identified, predictable solutions exist, nowhere is this assertion supported, and such is also simply not the case. In this regard, the Examiner has failed to support the "obvious to try" rationale presented in the Final Office Action. As noted above, the option set for a purging operation is not simply limited to: 1) a saline push followed by a contrast push; or 2) a contrast push followed by a saline push. A purging operation could be configured in any appropriate manner, for instance one or more saline pushes, one or more contrast pushes, and in any combination (e.g., a saline push, followed by a contrast push, followed by a saline push). Again, Appellant has set forth not only a very specific sequence, but the corresponding regions

purged by the different portions of the sequence. The purging operation of claim 57 requires that a first plunger drive ram (associated with contrast media) be advanced to a position where the plunger of the first syringe stops, and the advancement of the plunger of the first syringe to this stopping point purges air from the first syringe and the first section of Y-tubing. This part of the purging operation is followed-in-time by an advancement of a second plunger drive ram (associated with saline) to a position where the plunger of the second syringe stops, and the advancement of the plunger of the second syringe to this stopping point purges air from the second syringe, the second section of Y-tubing, the intersection of the first, second, and third sections of Y-tubing, and the third section of Y-tubing. Based upon the vast option set for configuring a purging operation, one skilled in the art simply would not be motivated to modify the teachings of Emig and/or Stellant OMC in any manner that would yield Appellant's invention of claim 57.

Based upon the foregoing, independent claim 57 is allowable over Emig and Stellant OMC. All claims depending from claim 57 are thereby also allowable over Emig and Stellant OMC for the above-noted reasons.

#### Independent Claim 71

Independent claim 71 is directed to a method of using a dual head injector. The method includes mounting a first syringe to the injector and mounting a second syringe to the injector. The method also includes coupling a first section of Y-tubing to the first syringe and coupling a second section of the Y-tubing to the second syringe. The Y-tubing further comprises a third section. The first, second, and third sections meet at an intersection, and each of the first and second sections feed into the third section such that the third section is downstream of each of the first and second sections. The method further includes initiating a purging operation while the first and second syringes are mounted to the injector and while the

first and second sections of the Y-tubing are coupled to the first and second syringes, respectively. The first syringe comprises contrast media prior to the initiation of the purging operation, and the second syringe comprises saline prior to the initiation of the purging operation.

The purging operation of independent claim 71 includes advancing a first plunger drive ram of the injector to move a plunger of the first syringe to a first predetermined stop point where the plunger of the first syringe stops. The advancing a first plunger drive ram step comprises purging air up to a first location of the Y-tubing and directing contrast media from the first syringe into the Y-tubing. The purging operation further includes advancing a second plunger drive ram of the injector to move a plunger of the second syringe to a second predetermined stop point where the plunger of the second syringe stops. The advancing a second plunger drive ram step comprises purging air up to a second location of the Y-tubing and directing saline from the second syringe into the Y-tubing. The second location (associated with the advancement of the second plunger drive ram) is downstream of the first location (associated with the advancement of the first plunger drive ram). The advancing of the first plunger drive ram (associated with contrast media) occurs before the advancing of the second plunger drive ram (associated with saline).

It is noted that the timing of the advancements of the first and second plunger drive rams in claim 71 is the same as set forth in claim 57, as are the fluids associated with the advancement of the first and second plunger drive rams (contrast media and saline, respectively). That is, that portion of the purging operation involving the contrast media syringe occurs before that portion of the purging operation involving the saline syringe in the case of claim 71. Accordingly, the deficiency of Emig in view of Stellant OMC is also applicable to claim 71.

Furthermore, the Examiner asserts the first and second obviousness rationales discussed above to find claim 71 obvious. For the same reasons presented above regarding the shortcomings of the



Examiner's first and second obviousness rationales, the Examiner has failed to provide a showing of obviousness with regard to claim 71.

Based upon the foregoing, independent claim 71 is allowable over Emig and Stellant OMC. All claims depending from Claim 71 are thereby also allowable over Emig and Stellant OMC for the above-noted reasons.

### **Conclusion**

In view of the above remarks, the pending claims are believed allowable and the case in condition for allowance. Appellant respectfully requests that the rejections of all pending claims be reversed. Appellant has met or exceeded the burden of overcoming the prima facie case of unpatentability made out by the Examiner by providing rebuttal evidence of adequate weight and explaining how and why the record indicates the pending claims are patentable.

Respectfully submitted,  
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## VIII. CLAIMS APPENDIX

1-56. (CANCELED)

57. A method of using a dual head injector, the method comprising:

mounting a first syringe to the injector;

mounting a second syringe to the injector;

coupling a first section of Y-tubing to the first syringe;

coupling a second section of the Y-tubing to the second syringe, wherein the Y-tubing further comprises a third section, wherein the first, second, and third sections meet at an intersection, and wherein each of the first and second sections feed into the third section;

initiating a purging operation while the first and second syringes are mounted to the injector and while the first and second sections of the Y-tubing are coupled to the first and second syringes, respectively, wherein the first syringe comprises contrast media prior to the initiation of the purging operation, wherein the second syringe comprises saline prior to the initiation of the purging operation, and wherein the purging operation comprises:

advancing a first plunger drive ram of the injector to move a plunger of the first syringe to a first predetermined stop point where the plunger of the first syringe stops, wherein the advancing of the first plunger drive ram purges air from the first syringe and the first section of Y-tubing and fills the first section of the Y-tubing with contrast media from the first syringe, and wherein the advancing of the first plunger drive ram purges air up to the intersection of the first, second, and third sections of the Y-tubing; and

advancing a second plunger drive ram of the injector to move a plunger of the second syringe to a second predetermined stop point where the plunger of the second syringe stops, wherein the advancing of the second plunger drive ram purges air from the second syringe, the second section of the Y-tubing, the intersection of the first, second, and third sections of the Y-tubing, and the third section of the Y-

tubing, wherein the advancing of the first plunger drive ram occurs before the advancing of the second plunger drive ram, and wherein the advancing of the second plunger drive ram comprises filling each of the second and third sections of the Y-tubing with saline from the second syringe; and

initiating an injection procedure that includes injecting contrast media into the patient from the first syringe, wherein the injection procedure occurs:

after the purging operation is completed;

while the first and second syringes are mounted to the injector; and

while the first and second sections of the Y-tubing are coupled to the first and second syringes, respectively.

58. The method of claim 57, wherein a combination of the advancing of the first plunger drive ram and the advancing of the second plunger drive ram results in a purge of substantially all air from the first and second syringes and the Y-tubing.

59-67. (CANCELLED)

68. The method of claim 57, wherein the second syringe is prefilled with saline.

69. The method of claim 57, wherein the first syringe is prefilled with contrast media.

70. The method of claim 57, further comprising the step of:

filling each of the first and second syringes with fluid after the corresponding mounting step, wherein the purging operation is initiated after an entirety of the filling step has been completed.

71. A method of using a dual head injector, the method comprising:

mounting a first syringe to the injector;

mounting a second syringe to the injector;

coupling a first section of Y-tubing to the first syringe;

coupling a second section of the Y-tubing to the second syringe, wherein the Y-tubing further comprises a third section, wherein the first, second, and third sections meet at an intersection, and wherein each of the first and second sections feed into the third section such that the third section is downstream of each of the first and second sections;

initiating a purging operation while the first and second syringes are mounted to the injector and while the first and second sections of the Y-tubing are coupled to the first and second syringes, respectively, wherein the first syringe comprises contrast media prior to the initiation of the purging operation, wherein the second syringe comprises saline prior to the initiation of the purging operation, and wherein the purging operation comprises:

advancing a first plunger drive ram of the injector to move a plunger of the first syringe to a first predetermined stop point where the plunger of the first syringe stops, wherein the advancing a first plunger drive ram step comprises purging air up to a first location of the Y-tubing and directing contrast media from the first syringe into the Y-tubing; and

advancing a second plunger drive ram of the injector to move a plunger of the second syringe to a second predetermined stop point where the plunger of the second syringe stops, wherein the advancing a second plunger drive ram step comprises purging air up to a second location of the Y-tubing and directing saline from the second syringe into the Y-tubing, wherein the second location is downstream of the first location, and wherein the advancing of the first plunger drive ram occurs before the advancing of the second plunger drive ram; and

initiating an injection procedure that includes injecting contrast media into the patient, wherein the injection procedure occurs:

after the purging operation is completed;

while the first and second syringes are mounted to the injector; and

while the first and second sections of the Y-tubing are coupled to the first and second syringes, respectively.

72. The method of claim 71, wherein the advancing of the first plunger ram purges air up to the intersection of the first, second, and third sections of the Y-tubing.

73. The method of claim 72, wherein the advancing of the second plunger drive ram purges air from the second syringe, the second section of the Y-tubing, the intersection of the first, second, and third sections of the Y-tubing, and the third section of the Y-tubing.

74. The method of claim 71, wherein the advancing of the second plunger drive ram purges air from the second syringe, the second section of the Y-tubing, the intersection of the first, second, and third sections of the Y-tubing, and the third section of the Y-tubing.

75. The method of claim 71, wherein the advancing of the first plunger drive ram comprises filling the first section of the Y-tubing with contrast media.

76. The method of claim 75, wherein the advancing of the second plunger drive ram comprises filling each of the second and third sections of the Y-tubing with saline.

77. The method of claim 71, wherein the advancing of the second plunger drive ram comprises filling each of the second and third sections of the Y-tubing with saline.

78. The method of claim 71, wherein the first syringe is prefilled with contrast media.

79. The method of claim 71, wherein the second syringe is prefilled with saline.

80. The method of claim 71, further comprising the step of:

filling each of the first and second syringes with fluid after the corresponding mounting step, wherein the purging operation is initiated after an entirety of the filling step has been completed.

**IX. EVIDENCE APPENDIX**

No copies of evidence are required with this Appeal Brief. Appellant has not relied upon any evidence submitted under 37 C.F.R. §§ 1.130, 1.131, or 1.132.

**X. RELATED PROCEEDINGS APPENDIX**

There are no copies of decisions rendered by a court or the Board to provide with this Appeal as there are no related proceedings.